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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,806

07/18/2003

Hsuan-Wen Wang

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02/16/2006

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EXAMINER

CASIANO, ANGEL L

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/622,806</p>	<p>Applicant(s)</p> <p align="center">WANG ET AL.</p>	
	<p>Examiner</p> <p align="center">Angel L. Casiano</p>	<p>Art Unit</p> <p align="center">2182</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.</p> | <p>4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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Response to Amendment

1. The present Office action is in response to application dated 08 August 2005.
2. Claims 1-36 are pending in the present application. All claims have been examined.
3. The present communication supersedes the Non-final Office action dated 26 October 2005.

Drawings

4. Previous Objection to the Drawings has been overcome in view of the present Amendment.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for

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establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-6, 8-13-25, and 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyles et al. [6,377,583 B1] in view of Black et al. [US 2003/0174722 A1].

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Regarding claim 1, Lyles et al. teaches a device (see Figure 3, "31") having a *memory device* (see col. 10, lines 51 and 55; Figure 3, "27"). This device maintains flow control *status* (see "check traffic shaping status"; col. 10, lines 60-61) for a plurality of flows. In the reference, each of the flows is identified by an associated *index* (see "circuit index" and "pointer" to location "in data memory 27"; col. 10, lines 54-55). The reference teaches receiving a flow control message (see "arrival message") and to determine the associated index for it (see col. 10, line 56). The flow control status is updated based on the received flow control message (see "determine", col. 10, lines 64-65; col. 11, lines 4-6).

However, Lyles et al. does not teach a "scoreboard memory" device to maintain flow control status or and "updater" to update the flow control status. Regarding these "means", Black et al. teaches a device (see Figure 4) where the "scoreboard circuitry" reads messages and uses the information therein regarding the identity of a sending port and the status codes in the message to update the status entry for the port (see [0082]). That is, the reference teaches a flow control message to update the status by a scoreboard device.

At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures

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in order to obtain an inexpensive FCAL system with reduced components ("bufferless") and increased bandwidth, as taught by Black et al.

As for claim 2, the Lyles et al. reference teaches that the plurality of flows may be based on at least some subset of source/destination (see col. 8, line 17; Figure 7), priority (see col. 5, line 61), class of service (see col. 2, lines 26-27), and quality of service (col. 1, line 62).

As for claim 3, the Lyles et al. reference teaches a flow control message is received in response to capacity of a queue (see "managed", "sized"; col. 8, lines 46-49).

As for claim 4, the Lyles et al. reference teaches changing the propriety of objects (see col. 6, lines 5-7).

As for claim 5, the Lyles et al. reference teaches updater includes a comparator ("recognizer"; col. 10, line 62) to compare the received flow control message and updating ("determine"; col. 10, line 64) the flow control *status* maintained in the memory device based on the comparison.

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As for claim 6, the Lyles et al. reference teaches *updating* the flow control status maintained in the memory device to reflect status identified in the received flow control message (see "message also indicates whether cell is to be queued in the data path, the control path, or both"; col. 11, lines 2-6).

As for claim 8, the Lyles et al. reference teaches discarding the control message (see "when the cell has been appropriately queued", "return an added message to the cell flow control unit"; col. 11, lines 6-11). The discarding function notified the *flow control unit* that the newly queued cell needs to be taken into account in future computations.

As for claim 9, the Lyles et al. reference teaches the "cell flow control unit 55" which sends a message for a particular flow based on the status (see col. 11, lines 1-4).

As for claim 10, the Lyles et al. reference teaches that selection of the queue is based on the priority of the related flow (see col. 9, lines 51-52).

As for claim 11, the combination of references fails to explicitly teach, "broadcasting" a flow control message.

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Nonetheless, the Lyles et al. reference does teach "sending" and "arrival message" to "notify a cell flow control unit 55 of the cell's arrival" (see col. 10, lines 55-56). Therefore, although Lyles et al. does not refer to the message as "broadcast", it would have been obvious to one of ordinary skill in the art at the time of the invention that the flow control unit 55 is notified by a message that is transmitted.

As for claim 12, the Lyles et al. reference teaches updating the flow control status associated with the message (see col. 10, lines 61-65; see also Black et al. [0082]).

As for claim 13, the Lyles et al. reference teaches an index associated with a particular flow (see col. 9, lines 38-47).

Regarding claim 14, Lyles et al. teaches a device (see Figure 3) having a *memory* device (see col. 10, lines 51 and 55; Figure 3, "27") and maintains flow control *status* (see col. 10, lines 60-61) for a plurality of flows. In the reference, each of the flows is identified by an associated *index* (see "circuit index" and "pointer" to location "in data memory 27"; col. 10, lines 54-55). In addition, the reference teaches the "cell flow

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control unit 55" which sends a message for a particular flow based on the status (see col. 11, lines 1-4) and that selection of the queue is based on the priority of the related flow (see col. 9, lines 51-52).

However, Lyles et al. does not teach a "scoreboard memory" device to maintain flow control status for a plurality of flows. Regarding these "means", Black et al. teaches a device (see Figure 4) where the "scoreboard circuitry" reads messages and uses the information therein regarding the identity of a sending port and the status codes in the message to update the status entry for the port (see [0082]). That is, the reference teaches a flow control message to update the status by a scoreboard device.

At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures for the reasons stated above.

As for claim 15, the Lyles et al. reference teaches a flow control message is received in response to capacity of a queue (see "managed", "sized"; col. 8, lines 46-49).

As for claims 16-17, the Lyles et al. reference teaches updater includes a comparator ("recognizer"; col. 10, line 62)

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to compare the received flow control message and updating ("determine"; col. 10, line 64) the flow control *status* maintained in the memory device based on the comparison. Although not citing that the message generator "invalidates" or "erases", the flow control unit performs determinations as to the status, as cited above.

As for claim 18, in the Lyles et al. reference, each of the flows is identified by an associated *index* (see "circuit index" and "pointer" to location "in data memory 27"; col. 10, lines 54-55). The reference teaches receiving a flow control message and to determine the associated index for it (see col. 10, line 56). The flow control status is updated based on the received flow control message (see "determine", col. 10, lines 64-65; col. 11, lines 4-6).

Regarding claim 19, this essentially constitutes the method to be performed by the device disclosed in claim 14. The present combination of references teaches or suggests all the limitations corresponding to the device and therefore also teaches the steps corresponding to the method. The present claim is rejected under the same rationale.

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As for claims 20-22, these constitute the method to be performed by the device disclosed in claims 15, 16, 18. The present claims are therefore rejected under the same rationale.

Regarding claim 23, this essentially constitutes the method to be performed by the device disclosed in claim 1. The present combination of prior art teaches or suggests all the limitations corresponding to the claimed device and therefore also teaches the steps corresponding to the method. The present claim is rejected under the same rationale.

As for claims 24-25, 27- 31, these constitute the method to be performed by the device disclosed in claims 5-6, 8-10, and 13. The present claims are therefore rejected under the same rationale.

Regarding claims 32-34, these constitute the implementation of an apparatus, containing the limitations of the device disclosed in previously rejected claims. The present combination teaches the limitations corresponding to that device and therefore also teaches the apparatus implementing its characteristics. The present claims are rejected under the same rationale.

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Regarding claim 35, this constitutes the implementation of a device, containing the limitations of the "store and forward" device disclosed in previously rejected claims. The present combination teaches the limitations corresponding to those claims and therefore also teaches the device implementing these characteristics. The present claim is rejected under the same rationale.

As for claim 36, the Lyles et al. reference teaches an updater including a comparator ("recognizer"; col. 10, line 62) to compare the received flow control message and updating ("determine"; col. 10, line 64) the flow control *status* maintained in the memory device based on the comparison. However, Lyles et al. does not teach a "scoreboard memory". As for this limitation, Black et al. teaches a device (see Figure 4) where the "scoreboard circuitry" reads messages and uses the information therein regarding the identity of a sending port and the status codes in the message to update the status entry for the port (see [0082]). That is, the reference teaches a flow control message to update the status by a scoreboard device.

At the time of the invention, one of ordinary skill in the art would have been motivated to combine the cited disclosures for the reasons stated above.

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9. Claim 7 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyles et al. [US 6,377,583 B1] in view of Black et al. [US 2003/0174722 A1], in further view of Davies et al. [US 5,819,111].

As for claim 7, the combination of references does not explicitly teach an updater which *makes no changes to the flow control status* maintained in the memory device if the comparator determines the associated index has the same flow control status as the received flow control message (emphasis added). Regarding this aspect of the invention, Davies et al. teaches a flow control (see Title) system where if a buffer is not full, the *flow control state variable is unchanged* (see col. 8, lines 5-13). Accordingly, at the time of the invention, one of ordinary skill in the art would have been motivated to modify the cited combination of disclosures in order to complete a process, until the next instruction is received, as taught by Davies et al. (see col. 8, lines 12-13).

As for claim 26, this constitutes the method to be performed by the device previously disclosed in claim 7. The present claim is therefore rejected under the same rationale.

Response to Arguments

10. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "flow control hubs to manage the delivery of the flow control messages") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

According to claim 1, a flow control hub comprises an address decoded, which receives a flow control message and determines and index for it. An updater updates flow control status based on the received control message. Therefore, it follows from the claim language that the recited singular hub is controlling the reception (rather than the delivery) of the flow control messages.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel L.


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Casiano whose telephone number is 571-272-4142. The examiner can normally be reached on 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alc
26 January 2006


KIM HUYNH
SUPERVISORY PATENT EXAMINER
2/3/06